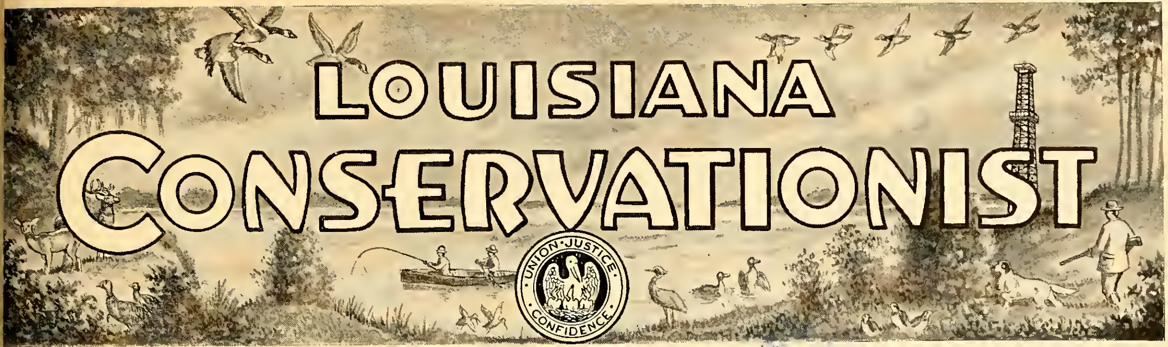
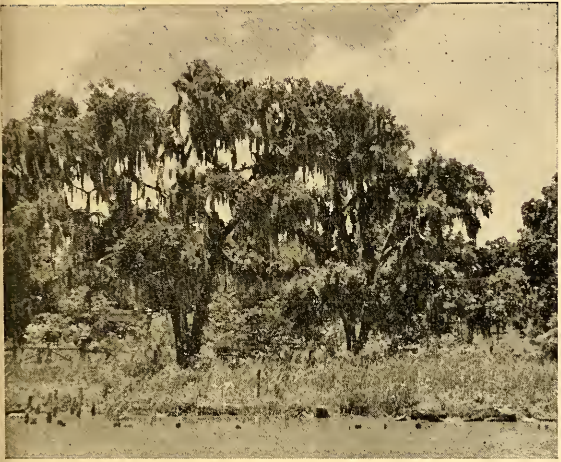


LOUISIANA CONSERVATIONIST

olume 1 AUGUST, 1943 Number 8 9



Spanish Moss hanging on Live Oak tree in Little Bayou Barataria ection. This is typical of beautiful scenes in Louisiana's unique bayou ection.

THE RELATIONSHIP OF CRUDE OIL PRICES TO OIL CONSERVATION

By JOS. L. McHUGH

Conservation Commissioner

A considerable amount of newsaper and magazine space has been aken up lately with discussions bout the necessity for an increase the price of crude oil so that he oil industry may have the necssary encouragement and incenive to explore for new oil reerves. Congressman and Senators ave been making speeches about his matter and oil authorities all ver the nation have been urging n increase in oil production. our Conservation Department nd officials of our Minerals Diviion have been active in this work, nd we, too, have been urging an ncrease in the price of crude oil ecause we believe that this is esential to increase oil production nd our oil reserves.

The average laymen may be conused about the necessity or imortance of this move, and it is he purpose of this article to present the facts so that our people of Louisiana may understand why this undertaking is so important and so vital to the war effort.

I need not take time to tell you how necessary oil is to quick victory over our enemies. It is sufficient to say that we will win the war by our use of unprecedented amounts of oil, vastly exceeding the oil avails of the Axis powers. Currently, the American oil industry can produce, conservatively, that is, without waste, approximately 4,600,000 barrels of oil a day. If it were forced to abandon completely the practice of conservation, as it might have been forced to do if our enemies had been more successful in their attempts to capture the oil resources of other countries, it could produce as much as 9 million barrels of oil a day. There would be no question of a shortage of oil with which to bring the war to an early successful termination and with the

(Continued on Page 5, Column 1)

Hunters Wonder About Ammunition As Dates for '43 Season Are Announced

Over Half Million Realized from Game Preserve

Four 500 acre tracts of land on the Rockefeller Game and Wildlife Preserve in Cameron and Vermilion Parishes have been leased for oil exploration to two major oil companies and cash bonuses received for the four tracts making up 20,000 acres of the 81,000 acre preserve has brought the Conservation Department a total of $469,450, which when added to the $89,350 received a few months ago for geophysical work, makes a total of $558,800 received thus far on this refuge.

Under terms of the Rockefeller Foundation's deed to the State on this Refuge, money received from the refuge is placed in a special fund to be used for expanding facilities for birds and game and for general protection on the refuge. It also provides that any surplus shall go to schools or public health work.

Following a conference recently between Governor Sam Jones and Conservation Commissioner McHugh, it was announced that a total of $500,000 from this special fund would be dedicated to the schools.

The Magnolia Petroleum Company was the highest bidder on one of the tracts, and Humble Oil and Refining Company, which earlier this year had paid $89,350 for the right to conduct geophysical tests on the preserve, were awarded leases on the other three tracts. Humble paid a total of $269,200 cash for its three 5,000-acre tracts, while Magnolia's bid on the lease it received was $200,250, which represents the largest sum ever paid the State for a single oil lease.

Amid almost daily changing and conflicting reports about the amount of ammunition, if any, to be made available for hunters this Fall, the United States Fish and Wildlife Service this month announced the 1943 regulations governing the hunting of migratory game birds. The new rules differ only slightly from those in force last year.

Sportsmen will be permitted to retain birds lawfully taken for a period of 45 days following the close of the open season—an extension of 15 days from last season.

Shooting hours on migratory game birds will be from one-half hour before sunrise to sunset. Last season it was from sunrise to sunset.

The season on Doves in Louisiana has been changed. This year it will open on November 20th and run through December 19th. Last season it was from December 1 through December 30th.

In all other respects, the open seasons are the same as last year. On Ducks, coots and geese, the season opens November 2nd and runs through January 10th. For rails and gallinules, the season opens September 15 and runs through December 15th. On woodcock the season is from December 15 through December 29. There is a closed season on Snipe, the same as last year. The bag limits and possession limits remain the same as last year.

There are, of course, no changes in the regulations for resident game birds, as these regulations are fixed by the Louisiana Legislature, and are the same as last season. The hunting season officially opens in Louisiana on October 1 when it becomes legal to kill rabbits, chipmunks and squirrels. The season on bears opens November 1st, on deer, No-

(Continued on Page 5, Column 4)

SAM H. JONES
Governor of Louisiana

JOSEPH L. McHUGH
Conservation Commissioner

LOUISIANA CONSERVATIONIST

Published Monthly in the interest of conservation by the
Louisiana Department of Conservation
126 Civil Courts Building, New Orleans, La.

JOHN L. CONNER
Executive Assistant to Commissioner

ISAAC D. CHAPMAN
Editor

Permission for publication of all material in this issue is granted on condition that we receive marked copies and that credit be given for any illustrations reproduced. Contributions and photographs will be welcomed. Each should be accompanied by stamped return envelope. Proper credit will be given on all material accepted.

Volume 1 **AUGUST, 1943** **Number**

With the hunting season approaching, the concern of all hunters is directed toward the problem of ammunition. The following letter which I have just sent to the War Production Board, represents, I am sure, the views of a large majority of Louisiana conservationists:

> "War Production Board
> Washington, D. C.
>
> "Gentlemen:
>
> "Louisiana conservationists are concerned over the prevailing conflicting reports with reference to the amount of ammunition which will be made available this fall and winter to hunters. Local War Production offices in Louisiana have been returning applications made out by hunters for ammunition with the notation that no ammunition will be made available, except for 'pest control' purposes, and to prevent crop damage.
>
> "Last season Louisiana sold over 140,000 hunting licenses. Many of these people who bought licenses are now and have been engaged in war industries. We all know that some recreation is vital in wartime, particularly for war workers who need short periods of time in the open to recharge their physical and mental energies. The recreational value of hunting alone, therefore, is sufficient to justify such hunting as may be possible under war conditions, without considering the value of the food taken. During the 1942-43 season, hunters in the United States took a total of 255,404,000 pounds of usable meat for home consumption. This annual crop of wildlife, so needed to help out in the present meat shortage, cannot be harvested except by recreational hunting.
>
> "There is also the fat which can be salvaged from this wildlife, and the feathers from ducks and other game, all of which can be used in the manufacture of war materials and products.
>
> "For all of these reasons, we urgently request, on behalf of the hundreds of thousands of war workers and sportsmen of Louisiana, that a sufficient amount of ammunition for hunting purposes be made available this Fall."
>
> Very truly yours,
>
> JOS. L. McHUGH,
> Conservation Commissioner.

* * * *

Louisiana's hunting licenses for 1943-44 will go on sale around September 1st, and sportsmen are reminded to get their licenses early.

LIME FOR LAND

(From the New Orleans States)

The announcement that the state of Louisiana had made $20,000 available for construction and operation of a shell crushing plant at Bayou Lacombe in St. Tammany parish for the manufacture of agricultural lime, will be enthusiastically acclaimed by those who understand the prime needs of agriculture in this state.

Every foot of farm land in Louisiana with the exception of certain areas need liming. Good results in crop and live stock production can be expected only from alkalinized soil. To attempt to make Louisiana a great cattle and dairy state without first providing the soil that will grow palatable and nourishing grass and forage is to get off on the wrong foot.

South Louisiana has available a world of clam and oyster shells. Heretofore these have been used mainly for road paving, whereas they ought to have been set aside primarily for the manufacture of agricultural lime. These shells contain a high percentage of calcium, and if crushed to a fine mesh and fed to the soil, the calcium content will be absorbed readily. Here has been a wonderful opportunity to build a substantial shell-crushing industry in Louisiana, and it went begging. Louisiana farmers have been spending millions of dollars for basic slag and dolomitic limestone purchased in the Birmingham area at prices up to $15 a ton for the former and $6 for the latter, while the local oyster and clam shells could have been crushed and put on the market profitably for less than $4 a ton.

The Lacombe shell plant is expected to deliver the product a about $3.80 a ton.

The federal soil conservatio service provides a grant of $23,000 for machinery for the Louisiana plant. It is expected to begin operations in three or fou months. Soil can be rich and ye be sadly deficient in mineral elements. This is the case with muc of Louisiana. We dare to predic that the shell-crushing plant wil pay handsome dividends in increased farm production.

DIRECTORY OF DIVISION HEADS AND OFFICIALS OF CONSERVATION DEPARTMENT

Jos. L. McHugh, Commissioner
C. E. Morefield,
Acting Executive Assistant
Hale Boggs, Attorney
M. C. Potter, Secretary
H. M. Grode, Chief Accountant
J. N. Gowanloch,
Chief Biologist
Isaac D. Chapman,
Education and Publicity
J. G. Appel, Enforcement
Armand P. Daspit,
Fur and Refuge
Massey H. Anderson, Forestry
Dr. J. Huner,
Geological Survey
H. W. Bell, Minerals
J. N. McConnell,
Oysters and Waterbottoms
Wm. F. Chisholm,
Research and Statistics
James Brown,
Wildlife and Fisheries

GARFISH RODEO PLANNED FOR LAKE BISTINEAU

Sportsmen in Bossier Paris are making plans for a garfis rodeo to be held in Lake Bistinea sometime soon and they are raising money for prizes to be pai to the parties catching the larges garfish in any one day, the larges amount during the rodeo.

The Ducks Come Back---The Renaissance of Wildfowling

By Will J. Reid, President, Ducks Unlimited, Inc.

ouisiana, one of the greatest uck hunting states in the Union, ill probably see the largest outhward migration of waterfowl is fall in twenty years. This omeback of one of our finest ame species represents a miracle f wildlife preservation in which ederal agencies, state conservaon departments and cooperating rivate agencies may well share o little credit. Not the least f those who have played a big art in the renaissance of North American wildfowl are the Dominon and Provincial Governments f Canada, as well as the people f our good neighbor to the north.

Looking back to the early 930's when there appeared little ope for the survival of many of ur choicest sporting waterfowl, ew would have believed the miracle of restoration which today has come to pass. To quote from he propaganda of duck hunting prohibitionists of those days: 'Nine-tenths of the ducks are now gone—the season must be closed or good-bye forever to the waterowl!" Another organization advanced this slogan: "No man in he United States should be permitted to hunt more often than every other year." No less than four nationally known associations publicly advocated closed seasons on all duck hunting for periods of up to three years.

A prime consideration in any program of sound game management requires the preservation of sufficient breeding stock to assure adequate natural reproduction to replace the annual take by shooting. The idea of practical game management is natural production of more game than is taken by hunters in order to assure a progressive increase in the general supply. Under our system of governmental wildlife administration, regulation of the annual take is the prerogative of the Federal Government in the matter of migratory birds and of State Governments with regard to nonmigratory species. The United States Bureau of Biological Survey, now part of the United States Fish and Wildlife Service, admirably followed these concepts of good management by applying restrictions on hunters when the great duck depression got underway. Those restrictions were not always favored by many sportsmen with more or less local viewpoints. Hunting prohibitionists also berated this government agency because they felt the restrictions were not drastic enough. Today, however, we see the wisdom of preserving breeding stock.

But, having the birds to reproduce is one thing and having the necessary environment where their progeny can survive is another. From 1931, when waterfowl hunting seasons were cut to sixty days, to 1934 when the first real Federal breeding ground restoration was launched, the ducks continued to decrease. During 1934, the United States Biological Survey estimated there were probably less than thirty million ducks left on the continent—or fewer than three daily bag limits for every sportsman who now purchases a duck stamp.

Obviously something more than restrictions on shooting had to be applied if our migratory waterfowl were to be saved. While many drought and drainage-ruined breeding grounds could be restored by the Federal program in this country, it became much more obvious that similar efforts must be directed to Canada—particularly the prairie provinces, where over 70 per cent of the choicest sporting ducks nest. But Canada, being more sparsely populated and having no such sources of conservation funds as the United States, could not be expected to finance a refuge program similar to ours.

The necessity of extending the work into Canada was emphasized by the startling facts revealed in the first "International Wild Duck Census" sponsored by the More Game Birds Foundation. This unique survey, in which the Minnesota Conservation Department cooperated, covered the prairie duck nesting region from Minnesota west to Montana and north through Manitoba, Saskatchewan, Alberta and also parts of the Northwest Territories beyond. Three survey parties with pontoon equipped airplanes were used to locate and map the most important waterfowl concentration areas found in the Canadian north country. Thousands of voluntary workers assisted in the ground division of the census work, including state and provincial game wardens. Outstanding among the findings in this comprehensive survey was the fact that drought and drainage had ruined the bulk of our finest duck breeding territory on the Canadian prairies. From the results of this first study of its kind, Ducks Unlimited was born.

A STATEMENT ON DUCKS UNLIMITED FROM CONSERVATION COMMISSIONER McHUGH

"The Conservation Department of Louisiana has checked into Ducks Unlimited very carefully and found out that they are doing more for the comeback of ducks than all of the other projects put together and that at this time A. C. Glassell of Shreveport is raising funds for a group of lakes to be called Louisiana Lakes, in Canada, and Richard R. Foster, 430 Notre Dame Street, New Orleans, is raising some money to build a Lake Orleans, also in Canada. The Louisiana Lakes are now about two-thirds complete and approximately $15,000.00 of the $20,000.00 necessary has been raised. All duck hunters should help on this great project. Any money given to Ducks Unlimited is tax deductible. Funds should be sent to A. C. Glassell, Box 73, Shreveport B, Louisiana, with checks made payable to Ducks Unlimited, toward building the Louisiana Lakes, or to Richard R. Foster, 430 Notre Dame Street, New Orleans, toward building Lake Orleans. I am sure you will want to help in this great work."

JOS. L. McHUGH,
Conservation Commissioner.

Incorporated in 1937, Ducks Unlimited proposed to the wildfowlers of America that they should raise the funds needed to extend into Canada the breeding ground restoration program now such an outstanding success in this country. Groups of representative sportsmen were organized in over a score of states during 1937. Minnesota was one of the first states in the Union to form a state Ducks Unlimited organization. Within a year, over $125,000.00 in contributions had been raised and in March, 1938, Ducks Unlimited perfected a permanent organization at a meeting in Chicago. That same month a field organization of engineers and biologists was established in Canada with headquarters at Winnipeg, and the Canadian National Railways loaned Thomas C. Main, one of its outstanding water conservation engineers, to direct operations.

The fruits of Ducks Unlimited's work can best be illustrated by the restoration of Big Grass Marsh in Manitoba. This area of 50,000 acres was drained in an unsuccessful land promotion scheme and then abandoned a few years later by poverty-stricken farmers who found the marsh-bottom soil unsuited to raising wheat. The ducks, however, refused to abandon this ancestral breeding ground. Each Spring they returned, nested and brought off their young. By early Summer, however, the great drainage canals had sapped the last drop of water and the stench of decaying ducklings spread for miles around.

Big Grass Marsh was Ducks Unlimited's first restoration project. Two dams were installed across the main drainage canals and each year a little more water accumulated on the marsh. With heavy rains and spring run-off during 1942, Big Grass was completely restored to its former productivity. Not only were tens of thousands of waterfowl successfully produced on this great area but muskrats also have been coming back.

During March and April of this year, a fur crop of 5,000 muskrats valued at $10,000.00 was taken off Big Grass. Administration of this fur harvest is in the hands of a four-man committee representing the two townships which originally granted free use of their land holdings in the marsh, the Manitoba Government and Ducks Unlimited. After paying off local farmers who did the trapping, enough remains in the fur fund to pay the wages of a resident marsh manager as well as to meet maintenance costs of the entire project. Henceforth Big Grass Marsh, as a waterfowl and muskrat producing area, will be entirely self-supporting.

Ducks Unlimited today has a total of 105 areas under management in Canada. These projects cover approximately 1,100,000 acres. All but some 500 acres have been provided without cost through grants and easements by the Canadian Governments and private land owners. To develop these areas, Ducks Unlimited has contributed over $600,000.00 and in several instances Canada has also contributed part of the cost of dam construction.

That this possibly original inception of the "Lend Lease" idea has paid real dividends is evident

(Continued on Page 7, Column 1)

SUMMARY OF GROUND WATER CONDITIONS IN JEFF DAVIS AND ACADIA PARISHES

By J. C. MAHER

Ground water constitutes the principal source of water used in Jefferson Davis and Acadia Parishes for domestic and public supplies, and provides about one-half of the water required for rice irrigation. It is obtained from wells 15 to 440 feet deep, in sand and gravel of Pleistocene Age. At the surface is a relatively impermeable stratum of clay about 80 feet thick which forms a tight subsoil preventing or retarding downward seepage of irrigation water and serving as a confining bed for water in the underlying sand and gravel. Lenticular sands in the surficial clay contains water under water-table conditions and yield small supplies to a number of rural wells. The underlying sand and gravel beds, drawn upon by the large irrigation wells about 150 to 440 feet deep, extend to a depth of 750 feet in the northern section of Jefferson Davis and Acadia Parishes and to a depth of 1250 feet along the southern border. The water in the deeper part of the sand and gravel to the south is highly mineralized.

Water that enters the sand and gravel north of the rice irrigation area in Allen and Evangeline Parishes, where the coarse-textured Pleistocene sediments lie at or near the surface, moves southward and becomes confined beneath the surficial clay under artesian pressure. This pressure is sufficient to cause the water in wells in the northern part of Jefferson Davis and Acadia Parishes to stand within 45 feet of the surface, or about 7 feet above mean sea level. In the southern part of the parishes, where the altitude is much lower, the water stands within 6 feet of the surface, or about at mean sea level.

During the pumping season for rice irrigation about 350 to 400 of the 440 wells located in the area are pumped at rates of 1,000 to 4,500 gallons a minute. This pumping lowers the water levels in two large sub-circular areas, centering about Welsh, in Jefferson Davis Parish, and Iota, in Acadia Parish. The water level at Welsh generally declines 17 to 27 feet below mean sea level during the summer and recovers to one to four feet above sea level during the following winter and spring. Measurements recorded in the spring show that a maximum decline of 16 feet has occurred since 1903. Little, if any, increase in the amount of water pumped annually in the area has taken place since 1910, and the records for the past five years do not indicate a uniform decline, but rather a cycle of low and high stages related to the precipitation during the irrigating seasons.

The safe yield of a water-bearing material is the maximum rate at which water may be withdrawn without impairing the quantity or quality of the supply. In an artesian system such as the Pleistocene sand and gravel of the rice irrigation area, the safe yield is limited by the extent of the intake area, the amount of water from rain and stream flow available for ground-water recharge, the intake capacity of the sand, the permeability of the sand, the amount of water available from subterranean storage, and the opportunity for salt-water encroachment. Accurate determination of these limiting conditions requires an intensive investigation of the entire aquifer, which, in this case, covers most of southwestern Louisiana—a project beyond the scope of past investigations. However some consideration of these limiting conditions is warranted now to point the way for future work.

The sand and gravel in Jefferson Davis and Acadia Parishes is generally considered to be highly permeable because of the large yields of wells, the coarse texture of the water-bearing materials, and the characteristics of the self-potential curve registered on electric logs of oil tests. This is substantiated by laboratory determinations which, despite the inaccuracies of samples from rotary drilling and the limitations of the laboratory technique, reflect the magnitude of the permeability. Unfortunately it has not yet been possible to make pumping tests to determine the coefficient of permeability. The ability of the sand and gravel to transmit 300,000 acre-feet of water annually (a daily average exceeding one-quarter billion gallons) into Jefferson Davis and Acadia Parishes cannot now be evaluated, but the relatively small declines in water level over a period of 40 years indicates that the question of where the additional water is obtained may be more important.

Before ground-water irrigation was begun in southwestern Louisiana the water in the Pleistocene sand and gravel was in an approximate state of equilibrium, that is, the natural discharge through seepage and springs and southward percolation out of the area was balanced by natural recharge from rainfall and surface streams in the intake area. The withdrawal of about 300,000 acre-feet of water from wells each year since 1910, a total of about 9,600,000 acre-feet, must be balanced by one or more of the following: (1) an increase in recharge, (2) a decrease in the natural discharge, or (3) a reduction in storage.

Increased recharge has probably balanced the withdrawal of water for irrigation to a considerable extent. The average annual precipitation of about 55 inches is sufficient for this purpose provided it has easy access to the sand and gravel over a sufficiently wide area. The area in which recharge might be expected has not been studied in detail, but it probably extends 100 to 150 miles, across northern Calcasieu Parish, southern Beauregard Parish, and Allen, Evangeline, and St. Landry Parishes. The fact that some of this area has been deforested since 1910 may be considered as favorable to increased recharge, as losses of water through evaporation and transpiration are probably less. If the water level has been lowered in the intake area by the pumping in the rice-irrigation region, a greater part of the rainfall may be absorbed into the sand and gravel.

A decrease in rate of natural discharge of water from the sand and gravel has probably occurred since 1910. However it can hardly be evaluated without detailed knowledge as to how and where natural discharge took place. The supposition that natural discharge did or does take place is based upon the fact that a pressure gradient was and is maintained to the south beyond the irrigation area. The deposition of deltaic sediments is such that submarine outcrops of sand a gravel would not be expecte therefore any natural discharge the aquifer would probably along fault planes or throug sandy clays and shales. Detail investigations in Cameron a Vermilion Parishes are needed determine what proportion of th total pumpage in the rice irrig tion area has come from the d version of natural discharge. Wi the present information it a pears that this might account f only a small portion of the tot withdrawal.

The fact that the sand a gravel has a high permeabili and probably crops out over broad area suggests that much the water necessary to balan the withdrawal may have been o tained by a reduction of stora in the intake area—that is, a lowering of the water table the intake area. No records such lowering are available, b there are some reports from re dents in the area north of th rice-irrigation region that loweri has occurred. A lowering of a fe feet would have supplied a lar part of the water pumped. Wate level records in Allen and Evang line Parishes over a period years will be necessary to dete mine the proportion of water o tained by a reduction of stora in the recharge area.

The question of whether a part of the pumpage is balanc by displacement of fresh water salty water (either connate sea water) is one of primary i portance to the rice irrigator. T water from the irrigation we contains less than 100 parts p million of chloride throughout Je ferson Davis and Acadia Parish and the northern portion of Ca eron and Vermilion Parishes; chloride distribution pattern i

(Continued on Page 7, Column

Irrigation well near Church Point in Acadia Parish pumping abo 2,000 gallons a minute.

OIL CONSERVATION

(Continued from Page 1)

inimum loss of life and property ; the United Nations. We could ritably deluge our enemies with troleum.

The practice of conservation uring most of the last 18 years as led the industry to discover early 15 billion barrels of oil in ccess of the quantity it has prouced. By this means its proven eserves has been increased from ,300,000,000 barrels at the beinning of 1925 to a little more an 20 billion barrels at the beinning of the present year.

Perhaps it is the existence of is vast productive capacity which as made Washington authorities irn a nearly deaf ear to the inustry's petition for a measure of ie proven effective means of stimlating the search for additional eserves. Were it not for the conervative methods of crude oil deelopment, and of withdrawals rom reserves, which the Louisiana onservation Department and reglatory bodies of other States ave sponsored, the oil industry ven now might be moving heaven nd earth to discover and develop dditional oil reserves with which o stave off the enemy. And if ne can judge from the obvious villingness of the Army and Navy o pay productively stimulating rices for the munitions of war vhich are urgently required, the fforts to find and develop crude il reserves would not be restricted y a price policy established to chieve some entirely different and ion-productive purpose.

Because of devotion to the antinflationary fetish and general omplacency on the part of some uthorities in Washington, no weighty measures have been adopted for the stimulation of he search for oil. Existing reserves are threatened with wasteful depletion as the result of the declining fruitfulness of discovery efforts.

It is conceivable that in the event of an indefinite prolongation of the war, making ever-increasing demands upon the petroleum industry, that withdrawals each year would continue to exceed discoveries and would force the oil industry to resort to the rapid exhaustion of reserves by practices that are abhorrent to conservation, bringing about a loss of all, or most of the 15 billion barrels of reserves which the industry has husbanded through the practice of the principles of conservation. This is a possible price that the public would pay for the negation of the Petroleum Administrator's recommendation for a general crude oil price increase of 35¢ per barrel, which is less than 0.85¢ per gallon.

Many oil authorities are of the opinion that in the near future the demand for petroleum will exceed the currently available maximum efficient supply, necessitating resort to wasteful production. Some Washington authorities appear to be very much more concerned about the effect of an increase in the price of petroleum upon the hold-the-line policy than upon the oil industry's ability to satisfy, without waste, all demands upon it, or upon the financial status of producers who are forced now to produce oil for prices which will not yield replacement costs.

The hold-the-line policy, therefore, seems to have become the primary master and the volume of production to satisfy the demand the secondary one. The issue seems to be that either crude oil must be wastefully produced in order to satisfy total demand, or total demand must be further reduced for the purpose of holding the line. Perhaps it is largely because of a leaning toward the second of these alternatives that the power to ration petroleum products has been invoked. Rationing for cause or by pretext has proceeded to such an extent that the entire demands of our military forces, which have multiplied an unimaginable number of times the peacetime volume, have been and continue to be met, by the deprivation of the civilian population. Indeed the 1943 civilian consumption probably will be 385 million barrels less than it would have been had the war not altered the reatively even tenor of our ways.

If the deprivation of civilians were the only course open for the most vigorous prosecution of the war, there would, of course, be no issue. But the severe restriction of civilian consumption in nearly all parts of the country should be unnecessary; restriction operates to increase the inflationary gap, and in a significant way does violence to the principles of conservation broadly interpreted in terms of the welfare of the people.

Price always has been the factor which equated supply and demand. In peacetime, price has been a variable moving to any level necessary to perform its equalizing function. But at present the cart and horse are reversed. Price is no longer the free moving variable to equate supply and demand, but is a constant to restrict the supply to a preconceived total of demand. This is a condition unfortunate for civilians hungry for petroleum products, but it is the case.

If federal control of prices were concerned only with the maximum war-time production of goods in order of their essentiality, there is no doubt that in the light of diminishing discoveries of new reserves for any given volume of exploratory effort, and in further view of the imminence of a shortage of supply, the price control agency would long ago have accorded a general increase in the prices of crude petroleums and their products.

When the control of the prices of a natural resource like petroleum and its derived products is part of a general price freezing policy, production is stifled as emphasis is placed more and more upon the main objective, price immobility. Relatively moderate changes in prices, possible now to effect a gradual extension of productive capacity would avoid violent changes in prices necessitated by shortages developed otherwise in the future.

Licenses Show Increase in Shrimp Trawls

Despite wartime handicaps there are more fishermen engaged in shrimp trawling in Louisiana this year than before. This is indicated by the increase in the number of shrimp trawling licenses issued by the Conservation Department.

Up to August 9th, a total of 1,736 trawling licenses have been issued this year as compared with 1,643 issued up to the same date last year, an increase of 93 during the same period.

The season on shrimp in inside waters formally opened August 16th, after being closed since June 26, to permit shrimp in shallow waters to grow. Biologists have determined that shrimp have their greatest period of growth during this period.

Lack of ice has interfered with shrimping operations in some localities and efforts are being made to obtain more ice for shrimping fleets.

GOWANLOCH ADDRESSES JENNINGS ROTARIANS

James Nelson Gowanloch, Chief Biologist of the Division of Wildlife and Fisheries, was the principal speaker at the regular weekly luncheon of the Jennings Rotary Club, Saturday, August 7th, and spoke on the subject, "Louisiana's Wildlife Resources". The speaker was introduced by Commissioner Jos. L. McHugh, who was in charge of the program for the day.

HUNTERS WONDER

(Continued from Page 1)

vember 15th and on quail, December 1st.

Latest reports on the ammunition situation are to the effect the War Production Board is getting ready to make available 100 million shotgun shells to be allocated to the 48 states on information supplied by the federal fish and wildlife service on the estimated game population in each State.

Then there is another report that shells are to be rationed on the basis of one box of shells for every person who has a 1943 hunting license, and the report further states that such person will have to present his hunting license to his dealer for notation before he can buy his shells. Reports from Washington state that the majority of shells to be made available will be for 12 gauge shotguns (mostly four and six shot). There will be some 16 and 20 gauge shells manufactured, it was said.

Thus far, however, the War Production Board has been making shells available only to farmers for "pest control" purposes, for the killing of game that damage crops. Nothing official has been said about shells. Everything that is available on the subject thus far comes from "authoritative sources", and from "spokesmen" from this or that outfit, but the confusion still continues. However, since the hunting season is getting closer, it is expected that something really official on the subject will be forthcoming from Washington before long.

NEW STATE PARK GETS ADDED ACREAGE

The Department of Conservation has transferred to the State Parks Commission a total of 1750 acres of land adjacent to Fontainebleau State Park in St. Tammany Parish. The addition will more than double the size of the park, which now covers 1000 acres. The new addition to the park will not be developed until after the war, according to William W. Wells, acting director of the State Parks Commission.

Included in the tract transferred to the Parks Commission are 1350 acres formerly under the supervision of the Fur and Refuge Division; 100 acres under the supervision of the Forestry Division, and 350 acres comprising the Tchefuncta golf course which was started several years ago and never completed.

What Louisiana is Doing to Increase Oyster Productio

Editor's Note:—What Louisiana is doing to increase oyster production is told in this address by James N. McConnell, Director of the Division of Oysters and Waterbottoms, delivered recently at a combined convention of the Oyster Institute of North America, National Shellfisheries Association, Oyster Growers and Dealers North America held in Philadelphia, Pa. Excerpts from Mr. McConnell's address before this convention follows.)

First I wish to express to you my deep appreciation of this opportunity afforded me to give you a brief summary of what Louisiana is now doing, and expects to do, to increase oyster production as a part of the concerted national effort to increase seafood production as rapidly as possible.

We have just completed the bedding of 180,000 bushels of shells delivered to us by the various oyster steam canning plants operating in both Louisiana and Mississippi. This figure represents 10% of the amount removed from our natural reefs during the season 1942-43.

These shells were planted at factory expense under the direct supervision of the Oyster Division of the Louisiana Department of Conservation. From the experience acquired from 10 years of this type of planting we can reasonably expect a crop from this planting alone of 700,000 bushels ready for the market during the season 1944-45.

For the past two years we have been transplanting 18,000 to 24,000 bushels of seed oysters from overcrowded areas to depleted reefs. This work was done by several factories in lieu of shell planting and excellent results were obtained. This type of cultivation has the advantage of a resultant better grade of oysters remaining on the reefs and also having marketable oysters available on the depleted reefs in one year's time, from the date of transplanting.

On Saturday morning, before leaving New Orleans, for this convention, I received assurance from the Governor of Louisiana and the Commissioner of Conservation that a special sum of $50,000 would be set aside for the immediate bedding of additional oyster shells as "cultch" and additional transplanting of seed from overcrowded areas.

At this point I wish to emphasize the practical value obtained by scientific information gathered in our biological experiments. We have been conducting these experiments with the advice and assistance of Dr. Galtsoff and Dr. Hopkins and in many cases have used the splendid facilities available to us at the Fish and Wild Life Laboratory at Pensacola.

The fact that we have graphs showing the necessity of planting cultch now if we wanted maximum results was, I am sure, the deciding factor in having the money made available for immediate use.

We are fortunate in Louisiana in having large deposits of dead oyster shell reefs. Some of these reefs cover hundreds of acres with depths ranging from 1 foot to 35 feet of dead reef shells.

A royalty of 5c per cubic yard is charged for shells severed from these dead reefs and during the calendar year of 1942 the Department of Conservation collected approximately $88,000.00 from this source alone. At present this money goes into the general fund of the State. It is now planned to ask the Louisiana Legislature to set aside annually from this fund $50,000 to be used for oyster propagation and we have every reason to believe that this request will be granted.

Louisiana is glad to be able to state that in spite of all of the war-time problems we have had to face, we are still able to show a small production increase during the past year.

In listening to Dr. Galtsoff's address, it was a distinct pleasure to note that Louisiana showed by far the greatest increase in oyster production from the period 1890-92 to 1939, with the lone exception of the State of Washington where such great strides have been made with the Japanese oyster.

It is the considered opinion of most of us in Louisiana that a great future is opening to all oyster producers for the following reasons:

First, the shortage of all seafoods on the market today.

Second, the large number of military camps using oysters, which has cultivated a taste for same among the personnel from states where this food is not a part of their regular diet.

Third, the new method of refrigeration which now makes possible a quick frozen package which retains most of the original flavor and does not impair the texture of our oysters.

Fourth, transportation—with tremendous developments in aviation, we can reasonably expect both freight and express to be taken to all parts of the world as soon as the war is over.

I sincerely believe that no matter which section of the country sells additional oysters to people that have not been in the habit of eating them, all sections alike will benefit from resultant increased demands.

In closing, I wish to state th when I had the honor of addres ing this Association two years a in Atlantic City I mentioned th we were hoping to obtain an ai plane to assist us in patroling o coastal areas. We have been usi a small 65 HP two seated pla with pontoons for the last 1 months and it has proven e tremely satisfactory.

Let me thank you again for th opportunity to address this Ass ciation on "What Louisiana Doing and Intends to Do"—to i crease Oyster Production.

FISHING REGULATIONS FOR 1943 IN ALL PUBLIC WATERS

SPECIES	SIZE LIMIT (in inches)	CREEL LIMI (Fish per day
Trout ("Speckled")	12	25
Redfish	16	25
Sheepshead	10	25
Flounders	No Limit	25
*Black Bass ("Green Trout")	10	20
*Yellow Bass ("Striped Bass")	7	20
*White Bass ("Bar Fish")	7	25
*Crappie ("White Perch", "Speckled Perch", "Sac-a-lait")	7	25
*Sunfish ("Perch", "Bream", "Goggle-eye", etc.)	No Limit	100
Catfish	14	25
Buffalofish	16	25
Gaspergou	No Limit	No Limit
Paddlefish ("Spoon-bill Cat")	15 pounds	No Limit
Common Bullfrogs	5½	No Limit
Southern Bullfrogs	3½	No Limit
Carp	No Limit	No Limit
Hard-Shell Crabs	6	No Limit
Soft-Shell Crabs	4½	No Limit
Diamond-back Terrapin	6	No Limit
**Salt Water Shrimp (except Sea Bobs)	See note below this table	

*These are fresh water fish and their sale is prohibited.

**Must be not smaller than 68 shrimp to the pound.

Size limit expressed in table is minimum.

There is no state-wide closed season on game or commercial fish The Department of Conservation may authorize closed seasons o closed zones in ANY water where necessary but unless this has bee done fish may be taken at any time or place provided size limits an other restrictions are observed.

License must be kept in possession when fishing and shown o demand to any authorized agent or officer.

Penalties for violating fish laws: First violation, $25 to $100 o imprisonment ten days to 60 days, or both. Second or later offense, $100 to $300, or imprisonment 30 days to 90 days, or both. Eve more stringent penalties are provided for violation of the shrimp law.

HE DUCKS COME BACK

(Continued from Page 3)

m the remarkable increase of k production wherever a Ducks limited project has been estab- hed. The countless millions of cks which formerly perished w successfully reach maturity join the legions of their fel- ws now preparing for the great l migration. From 30 million terfowl in 1934, the wild ducks ached over 100 million last year. is fall an increase of possibly per cent appears assured. other Nature by providing more infall has helped greatly during e past three years. The scores permanent reservoirs estab- hed by Ducks Unlimited have so contributed immeasurably in lding that water where it would the most good for ducks on e Canadian prairies.

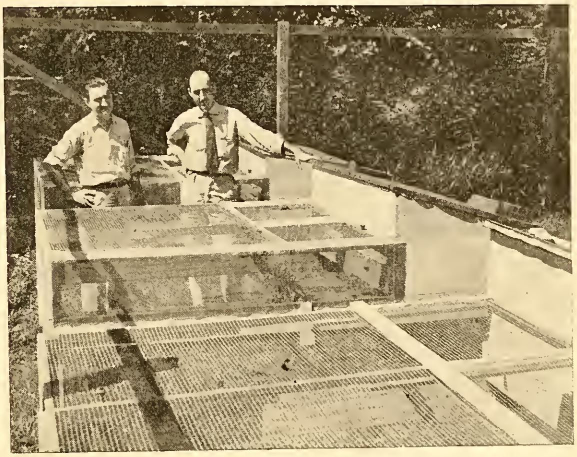
Ducks Unlimited's job in Can- la is, as yet, hardly one-third mpleted. The United States ish and Wildlife Service and ate conservation departments ho launched waterfowl restora- on programs in the days of im- ending disaster, also have far om completed their work to as- ure perpetuation of a great merican sport. The present reat war may well effect a reduc- on in funds available to carry n in fulfillment of an obligation hich we owe to our many brother portsmen now fighting for Vic- ory. To them we owe the obliga- on of seeing to it that there will e wildfowl to hunt when they eturn. To this end every real ildfowler can do his part by buy- ng his state hunting license, Fed- ral duck stamp and contributing hat he can to help this great ork in Canada with the splendid ooperation of our allies and good eighbors across the border.

TEN MINERALS HEARINGS HELD AUGUST 17-18

A total of ten mineral hearings were held in New Orleans Tuesday and Wednesday, August 17th and 18th, including the state-wide hearing for the nomination of crude oil and natural gas allowables during the months of September and October.

Presiding at the hearings were Conservation Commissioner Joseph L. McHugh, and he was assisted by his staff including Attorney Hale Boggs, H. W. Bell, Director of the Minerals Division, Dr. J. Huner, State Geologist, and Percy Ervin, Chief Petroleum Engineer.

SPORTSMEN OPERATE QUAIL HATCHERY



In May 1941, the Iberia Sportsmen's League organized a local quail hatchery, and has been operating it since that time. The brood stock was raised from eggs purchased. At present the hatchery has 63 young birds and 18 laying pairs. In 1942, 20 pairs of quail were released in Iberia Parish. In the above photograph, from left to right, are Joe Bourg and Jules Schwing, New Iberia business men, who are in charge of the quail project for the Iberia Sportsmen's League. As far as is known, this is the first project of this kind sponsored by an organized sportsmen's group in Louisiana.

GROUND WATER CONDITIONS IN 2 PARISHES

(Continued from Page 4)

dicating salt-water encroachment was found; and no increase in chloride content of the water was detected during the pumping season. However these facts do not afford conclusive evidence that fresh water is not being replaced by salty or brackish water in the lower parts of the sand and gravel. Most of the wells do not exceed 400 feet in depth and therefore draw water only from the top one-third of the 1250 feet of sand and gravel along the southern boundary of Jefferson Davis and Acadia Parishes.

The approximate contact between the fresh and brackish water in the sand and gravel has been determined from the resistance curves of electrical surveys made in oil wells. It is recognized that local structural conditions associated with the oil wells may cause some error in the delineation of the fresh water-brackish water contact, but the general agreement of the resistivity curves from well to well suggests that there is probably no serious error. A north-south section across Jefferson Davis Parish into Cameron Parish shows that the sand and gravel is divided in these parishes by a clay and shale bed below a depth of 400 feet. The deposit of sand and gravel above the clay and shale supplies all of the ground water for irrigation and contains fresh water as far south as T. 14 S., R. 6 W., in central Cameron Parish. The lower deposit of sand and gravel contains fresh water as far south as T. 9 S., R. 4 W., near Welsh. Between T. 9 S., R. 5 W. (Welsh field) and T. 11 S., R 5 W. (Hayes field) the lower water gradually becomes brackish southward. No wells draw upon this lower bed of sand and gravel. The clay and shale bed between the two beds of sand and gravel probably presents an effective barrier to migration of brackish water from the lower water-bearing bed into the upper one in this area. However this clay and shale bed thins rapidly to the east and is not present in Acadia Parish. Therefore the upper sand and gravel bed in this area is not entirely safe from future salt-water encroachment.

A north-south section across Acadia Parish and extending into Vermilion Parish shows that from T. 12 S., R. 1 W. (West Gueydan field) to T. 16 S., R. 1 E. (Pecan Island) no clay and shale bed is present to act as a barrier to upward migration of the brackish water in the basal part of the sand and gravel. Brackish water is probably present in the basal part of the sand and gravel as far north as T. 11 S. in the southern tip of Acadia Parish. Whether this brackish water has risen in the sand and gravel as a result of the pumping for rice irrigation cannot be determined now, but it is a definite possibility that requires further investigation. The continued movement of brackish water northward could cause the eventual abandonment of some rice-farming land, particularly in the southern part of the area. Here the heavy pumping of surface water from streams and canals causes salty water to move up the streams from the Gulf each summer. This salt-water encroachment in the streams becomes apparent in the middle of each irrigation season, causing many rice farmers to change from surface water to water from wells for the remainder of the growing season. Considerable alarm about the salt-water encroachment in surface streams has been expressed by farmers using ground water, as well as by those pumping water from canals and streams, because of the possibility that more and more water will have to be taken from wells, thereby lowering the ground-water levels farther in this critical region. This, in turn, might lead to the upward migration of the brackish water shown to be present in the basal part of the aquifer. There is no immediate danger of crop failure due to salt-water encroachment in the sand and gravel, but further investigations covering the entire region will be necessary to determine the long-term trend.

Aid To Sawmill Operators

Valuable suggestions for reducing labor requirements and for increasing the life of machinery in small sawmill operations are included in a bulletin, "Operating Small Sawmills in Wartime" released by the U. S. Forest Service. Of interest to portable sawmill operators and farmers who harvest their own timber, the bulletin is particularly timely because wartime demands for lumber require efficient operation of all existing mills.

The interest of small mill operators in this bulletin is indicated by several thousand advance requests already received. The bulletin is furnished without cost by the Forest Service as part of the Government's effort to improve the efficiency of small mills and increase lumber production.

Free copies are available for distribution upon request to the Regional Forester, U. S. Forest Service, Atlanta, Ga. They can also be obtained without cost from State Foresters, Extension Foresters and Forest Supervisors in each of the Southern States.

PARISHES IN WHICH VIOLATIONS OCCURRED AND ARRESTS MADE IN JULY

Avoyelles	4
Bossier	1
Caddo	2
Claiborne	3
DeSoto	3
Grant	1
Jefferson	40
Lafourche	1
La Salle	2
Madison	7
Morehouse	1
Natchitoches	30
Ouachita	1
Plaquemines	23
Rapides	1
Red River	6
St. Bernard	2
St. Tammany	8
Terrebonne	4
Winn	1
	141

TYPES OF VIOLATIONS WHICH WERE MADE DURING JULY

Angling Without License	21
Possessing Undersize Game Fish	9
Possessing Over Legal Limit	1
Using Illegal Tackle to Catch Game Fish	14
Selling Game Fish	9
Possessing Undersize Commercial Fish	10
Commercial Fishing Illegal Tackle	4
Catching and Possessing Shrimp in Closed Season	67
Hunting at Night	2
Hunting on State Preserves	1
Hunting Rabbits Out of Season	1
Hunting Ducks from Motor Boat	2
Total	141

AGENTS PARTICIPATING IN JULY ARRESTS

J. S. Bates, Angelo Benandi, Sam J. Chaze, Fred Cook, R. A. Davis, G. W. DeLoach, Tom Duck, C. W. Elam, D. L. Farrar, John W. Foolkes, John W. Gilbert, Henry L. Harper, E. B. Head, Lesma Hebert, Clarence Hood, P. F. Huddleston, R. D. Landry, J. V. McConnell, Jas. E. McFerrin, Jos. O. Mayeux, Earl Nugent, Sam Nunez, Frank Ragas, Lawrence Sintes, Frank Trocchiano, Emanuel Von Lubbe, Hector Waguespack, Homer O. Warren, L. C. Weaver, Elton Williams.

REMARKABLE BIRD CITY LOCATED NEAR JENNINGS

Hey, Boy! Page Mr. Ripley! Near Jennings, in Jeff Davis Parish, there is located a most remarkable bird colony. By coincidence Jennings is the home of Louisiana's present Conservation Commissioner, Joseph L. McHugh. This veritable bird paradise is located on the land of Mr. Frank Guidry, some eight miles south of Jennings.

Finding an agreeable home in a relatively small area of suitable swamp located on Mr. Guidry's land, these birds, the number of which he estimates at over ten thousand, gather every summer evening for their night's rest. Their orderly life adjusted to the hours of day, these birds observe remarkable rhythms in their work and sleep. Scattered far and wide in the rice fields where they perform a valient service by destroying incredible numbers of insects and other pests, their homing signal is the approach of evening. The spectable they provide, once observed, will never be forgotten. They come from literally every one of the 360 degrees of the compass, winging their way in sometimes leisurely and sometimes rapid flight, until they are over their favorite trees where swiftly they fall in rapid spirals to their resting place. These birds appear to live in reasonable amity in spite of their great numbers.

Vastly predominant in this group are the snowy egrets and the American egrets, birds whose lovely plumages once almost caused their extermination. The glossy ibis, called bec-croche in Louisiana-French, although not a member of the heron family, joins with them, too. Unlike the egrets, the ibis flies with outstretched neck.

Louisiana is probably the best state of all the forty-eight in which to observe herons, since within a period of only half an hour a traveler down a Louisiana bayou can observe as many as eleven different species of this remarkable bird family. Fortunately all are, as far as man is concerned, useful as well as magnificently plumaged birds.

Mr. Guidry thoroughly appreciates the privilege of being host and guardian to this magnificent bird city.

Another Lime Project Set Up in Louisiana

By the recommendation of Governor Sam Jones, the state board of liquidation has appropriated $20,000 to be used in the construction and operation of a sea shell crushing plant for the proproduction of agricultural limestone at Bayou Lacombe in St. Tammany Parish. It has also been announced that the United States Soil Conservation Service was making available approximately $23,000 in machinery and equipment to aid in this project.

This is the second limestone project undertaken in Louisiana, and both were discovered by the Louisiana Geological Survey, a division of the Department of Conservation. The other limestone project is located in Bienville Parish in North Louisiana.

Dr. J. Huner, State Geologist, and director of the Geological Survey, advises that this plant in St. Tammany Parish will be able to supply crushed limestone to farmers at a cost of approximately $3.80 per ton.

The plan of operation for the plant was worked out by Dr. Huner, who estimated that it would take from 90 to 120 days to get the plant into operation.

SECRETARY TO COMMISSIONER INDUCTED, ARMY

Marvin C. Potter, secretary t Conservation Commissioner Jos. I McHugh, was inducted into th Army of the United States o Saturday, August 14th, and wi report for duty on September 4th

Mr. Potter has been connecte with the Conservation Departmen since 1937, and has served as sec retary under five commissioners.

In commenting on Mr. Potter' induction into the army, Commis sioner McHugh paid him a hig compliment when he stated: "Th Conservation Department is losin one of its most valuable me temporarily and our loss is th army's gain."

The Commissioner announce that Daniel O. Payne, official re porter for the Mineral's Division would become acting secretary succeeding Mr. Potter, who ha been given a military leave o absence.

Roast skunk is a favorite foo among certain Canadian India tribes, and many white men hav said it is better than chicken.

DUCKS UNLIMITED, INC.
430 Notre Dame Street
New Orleans, La.

I hereby subscribe to Ducks Unlimited, Inc., the sum of $..............................

....

....

....

Contribute in accordance with your means. Deductible for Income Tax.